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בקשה לפטנט  
Application for Patent

מספר: Number	151353
תאריך: Date	20 08 2002
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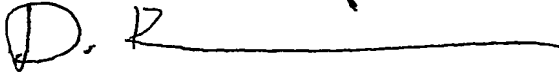
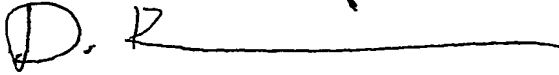
עברית  
(Hebrew)

APPARATUS FOR ERASING ROAD LANE LINES

אנגלית  
(English)

hereby apply for a patent to be granted in respect thereof

אבקש בזאת שינתן לי עליה פטנט

*בקשת חלוקה Appl. For Division		*בקשת פטנט מוסף Appl. for Patent Add.		*דרישת דין קדימה Priority Claim	
מבקשת פטנט from Appl.	מס' No.	*לבקשה/פטנט to Patent/Appl.	מס' No.	מספר/סימן Number/Mark	תאריך Date
dated	מיום	dated	מיום		
P.O.A: attached		*יפוי כח: מצ"ב			
המען למסירת מסמכים בישראל: Address for Service in Israel					
DANIEL FREIMANN, Adv. P.O.Box 29814 Tel Aviv 61297		דניאל פריימן, עו"ד ת.ד. 29814 תל אביב 61297			
On behalf of the Applicant		בשם המבקש		שנת 2002 Year	לחודש 08 Month
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**מתקן למחיקת קווי סימון על כבישים**

**APPARATUS FOR ERASING ROAD LANE LINES**

# **APPARATUS FOR ERASING ROAD LANE LINES**

## **BACKGROUND OF THE INVENTION**

Lane lines or stripes for designating highway traffic control are part and parcel of modern road construction.

Lane lines are applied to the asphalt or concrete road surfaces by special equipment. Large efforts have been expended in improving the durability over long time use and the intensive wear applied by the vehicle tires.

Hence, there were developed and introduced a variety of marking substances (special paints, heated thermosetting or reactive thermoplastics, epoxy and other materials) as well as methods of application thereof to the road surface by vehicular apparatus.

Techniques have also been developed to increase the thickness of the applied paint layer so that it will be felt by the drivers and, furthermore, will produce variable reflecting effects during night driving.

One aspect of this art has however been neglected or at least overlooked. Occasionally, though perhaps not very frequently, there becomes the need to erase existing lane marks. This may occur when the road undergoes maintenance operations, changes such as addition of lane or lanes, temporary deviations, or the like circumstances requiring the erasure of lane lines.

The presently used method is simply to cover the lane line with a layer of pitch. However, by doing so, the lines do not disappear, but on the contrary,

the vehicles headlights make them even more reflective than the original painted lines which of course may cause a serious safety problem. If the lane marks are chipped off (with chisels or by sand blasting), the result will be the formation of cavities or depressions that may endanger driving.

It is therefore the object of the present invention to cure those disadvantages of the road lane marks removing practices.

## **SUMMARY OF THE INVENTION**

Provided according to the invention is a vehicular apparatus for erasing road lane lines comprising a vehicular chassis, a torch mounted to the chassis directed downwards and, in line with the torch, a positively driven rotatable brush, the arrangement being such that by taxing along a traffic lane mark, the mark becomes decomposed under the heat of the torch and removed by the brush.

Preferably, the chassis is mounted to the front of a truck, and is displaceable in direction transversely to the truck.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

These and additional constructional features and advantages of the invention will become more clearly understood in the light of the ensuing description of a preferred embodiment thereof, given by way of example only with reference to the accompanying drawings, wherein -

Fig. 1 is an elevation of a dedicated vehicle for removing road lane lines provided according to the principles of the present invention;

Fig. 2 is a view taken along line II-II of Fig. 1;

Fig. 3 is a view taken along line III-III of Fig. 1, on an enlarged scale; and

Fig. 4 is a view taken along line IV-IV of Fig. 2 on an enlarged scale.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Vehicle 10 schematically shown in Fig. 1 is generally of any conventional type, e.g. a small truck, modified however to serve the purpose of removing or erasing road lane lines L (see Fig. 2) by apparatus 12 that is mounted to its front by a pair of brackets 14 and 16.

The apparatus 12, as a whole, is mounted to the brackets 14, 16 by both cross shaft 18 and a screw-threaded spindle 20 (Fig. 4) extending parallel to each other in a vertical plane. The apparatus 12 is thus suspended above the road R, carried by horizontal chassis side rails 22, 24 rigidly connected to vertical rails 26, 28. Rails 26, 28 are coupled to shaft 18 by slide bearings 30 and 32, and to the spindle 20 by nuts 34, 36, respectively.

The spindle 20 is rotatable in both directions by electric drive motor 38 coupled thereto by sprocket wheels 40, 42 through sprocket chain 44. The apparatus is thus transversely movable from side to side by rotation of the spindle 20 in one or the opposite direction while maintaining a constant height above the road R.

The apparatus 12 is further provided with a multi-flame burner unit denoted 50 with torches 51. The unit 50 is suspended from above, and adjustably movable by a pneumatic cylinder 52 and piston 54 assembly

mounted to a top rail 56, guided by rollers 58, 60 along vertical rails 62, 64 respectively (see Fig. 3).

A chimney fitting tube 66 extends upwards into chimney 68 to enable the (limited) up and down movement of the burner unit 50.

Combustible gas (e.g. Butane) supply line 70 is provided, curling up along a helix (to enable the vertical adjustment) and leading to a battery of gas containers 72 carried by the truck 10.

Further carried by the apparatus 12 is a high-speed rotatable steel brush 80, mounted on axle 82 which is driven by motor 84 through belt 86.

The operation of road lane erasing apparatus is as follows:

First, the truck 10 drives to the location where erasure of lane lines is requested, and positioned in alignment therewith. Due to the transverse displacement arrangement as above explained (the spindle 20), it is not mandatory that the truck itself be centered on the line  $L$ , but only the apparatus 12. This feature would allow treating marginal lane lines without driving with half of the truck off the road; or to treat a central line without blocking the road by driving along the center of the road.

Then, while the torches 51 are burning and the brush 80 is rotating, the truck slowly drives over the lines. The substance of the lane marks become decomposed and then brushed off.

Those skilled in the art to which this invention pertains will readily appreciate that numerous changes, variations and modifications can be

effectuated without departing from the true spirit and scope of the invention as defined in and by the appended claims.



## **WHAT IS CLAIMED IS:**

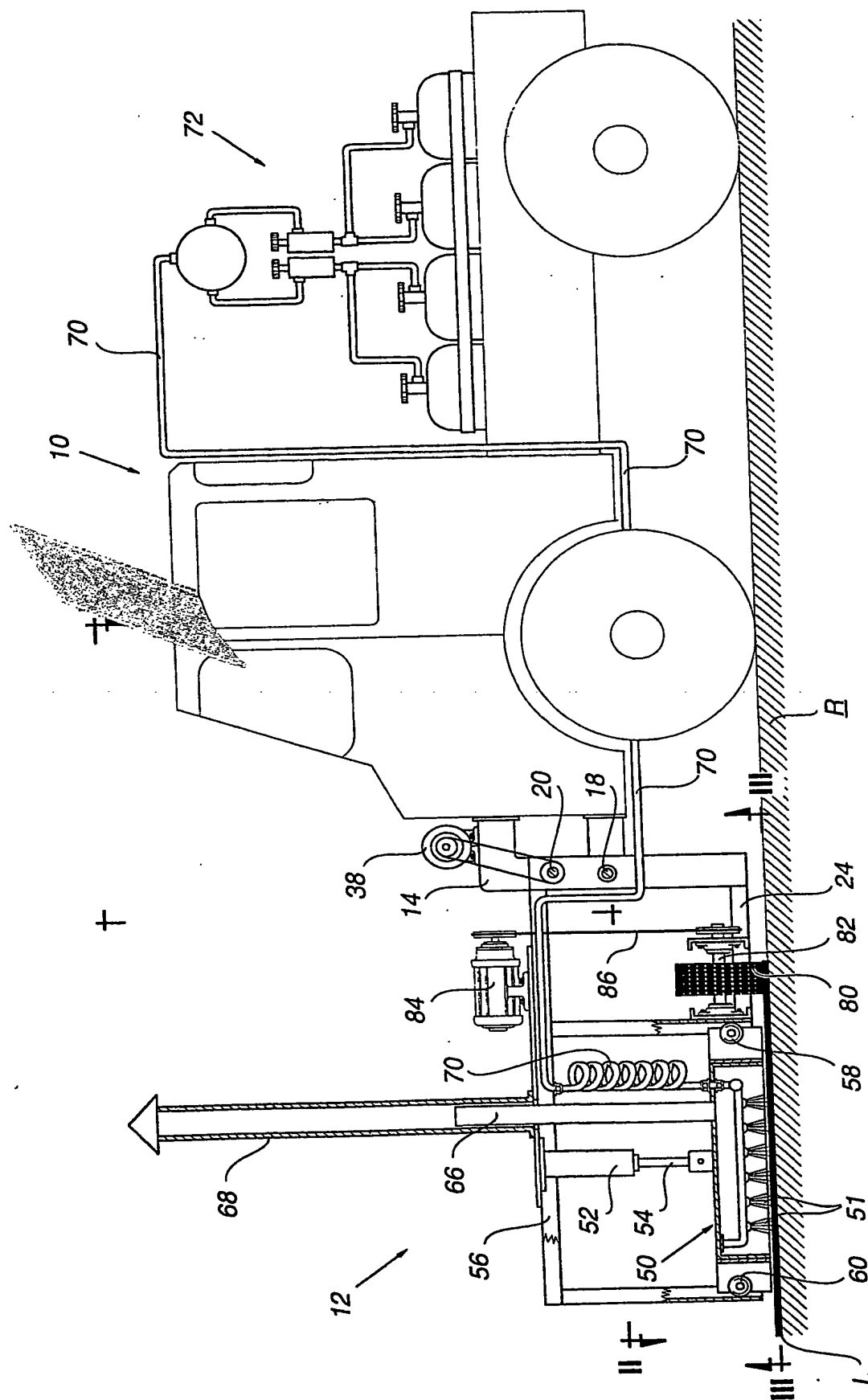
1. An apparatus for erasing road lane lines comprising a vehicular chassis, a torch mounted to the chassis directed downwards and, in line with the torch, a positively driven rotatable brush, the arrangement being such that by taxing along a traffic lane mark, the mark becomes decomposed under the heat of the torch and removed by the brush.
2. The apparatus of Claim 1 wherein the chassis is mounted to the front of a truck.
3. The apparatus of Claim 2 wherein the chassis is displaceable in direction transversely to the truck.
4. The apparatus of Claim 3 wherein the chassis is mounted on and coupled to a screw-treaded spindle, means being provided for rotating the spindle thereby attaining the transverse displacement thereof.
5. The apparatus of Claim 4 wherein a plurality of torches are provided on a common support burner unit, the unit being mounted to the chassis by vertically adjustable means.
6. The apparatus of Claim 5 wherein the vertically adjustable means comprise pneumatic cylinder and piston assembly.
7. The apparatus of Claim 6 wherein the burner unit is supported by vertical guide rails.

8. The apparatus of Claim 7 wherein a chimney is provided for removing the combustion gases.
9. An apparatus for erasing road lane lines substantially as hereinbefore claimed in Claim 1 and described with reference to the accompanying drawings.

For the Applicant



**Daniel Freimann, Adv.**



**FIG. 1**

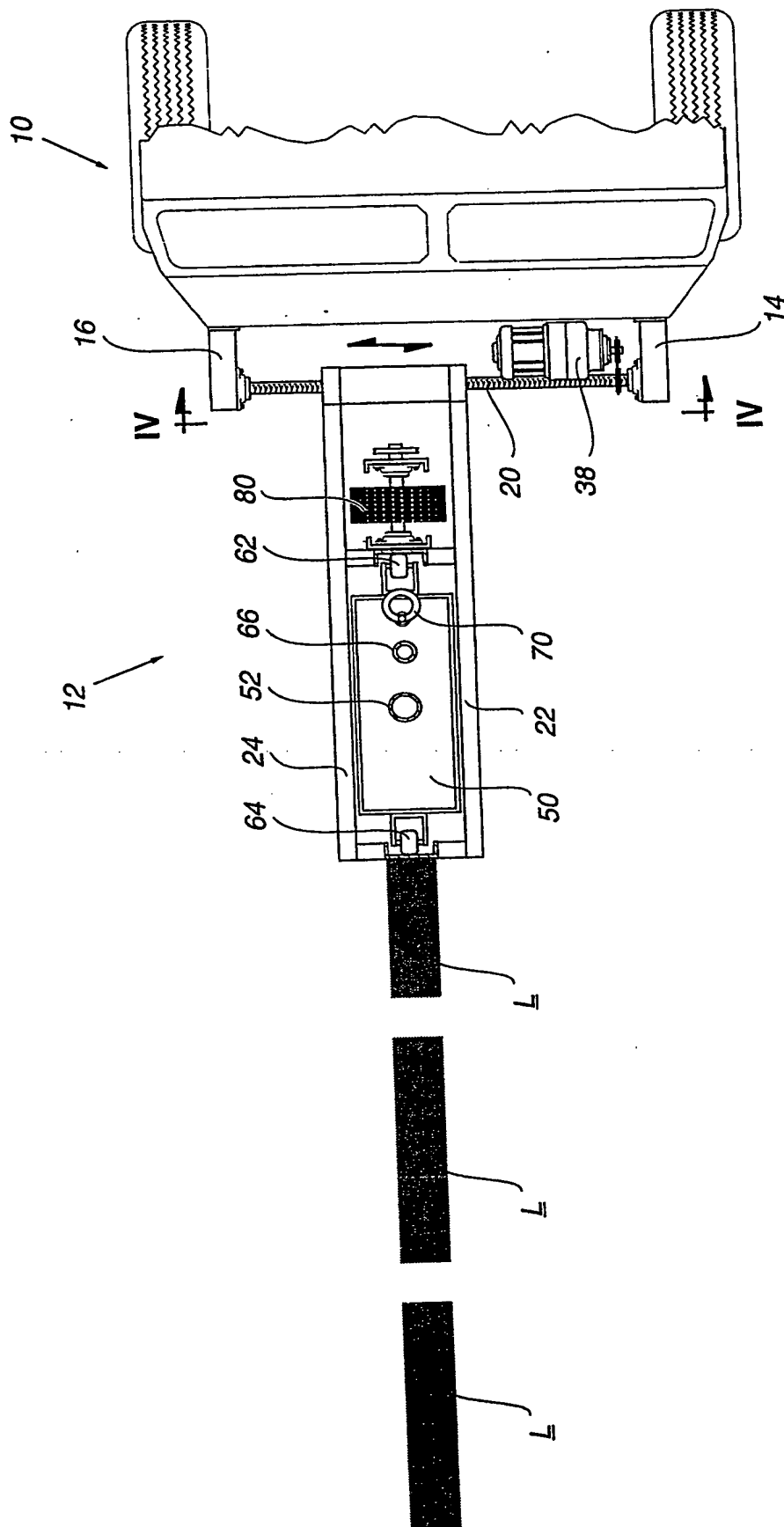


FIG. 2

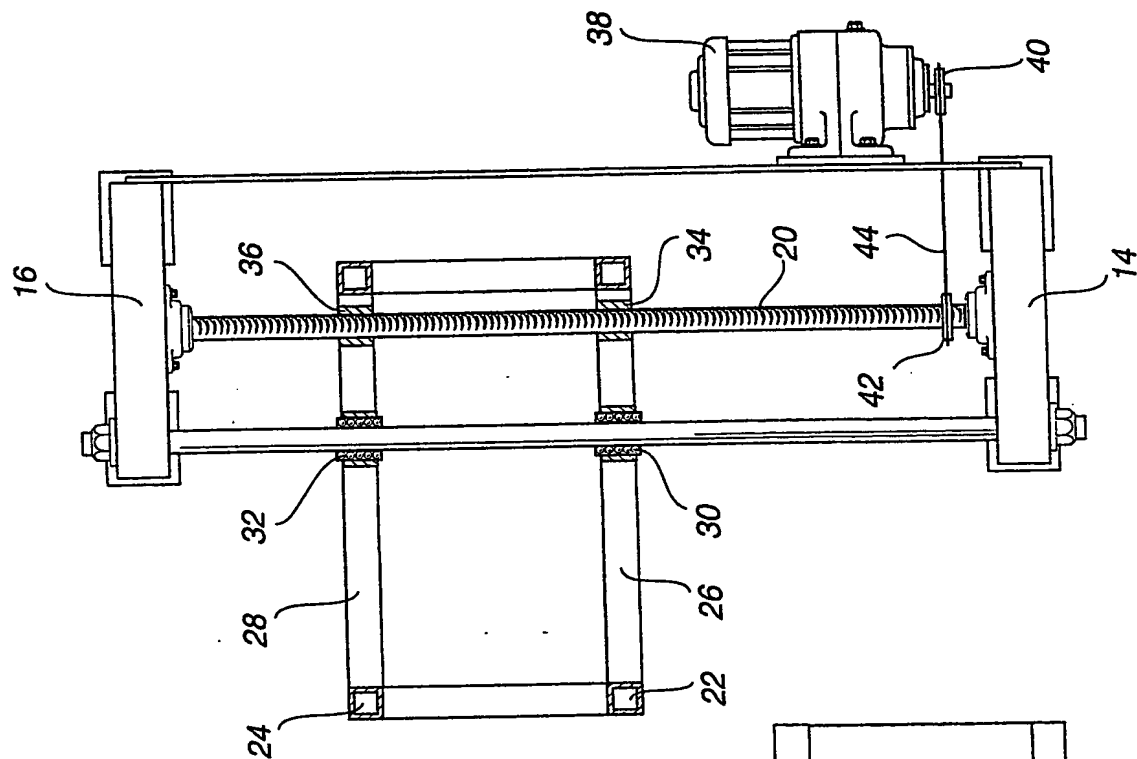


FIG. 4

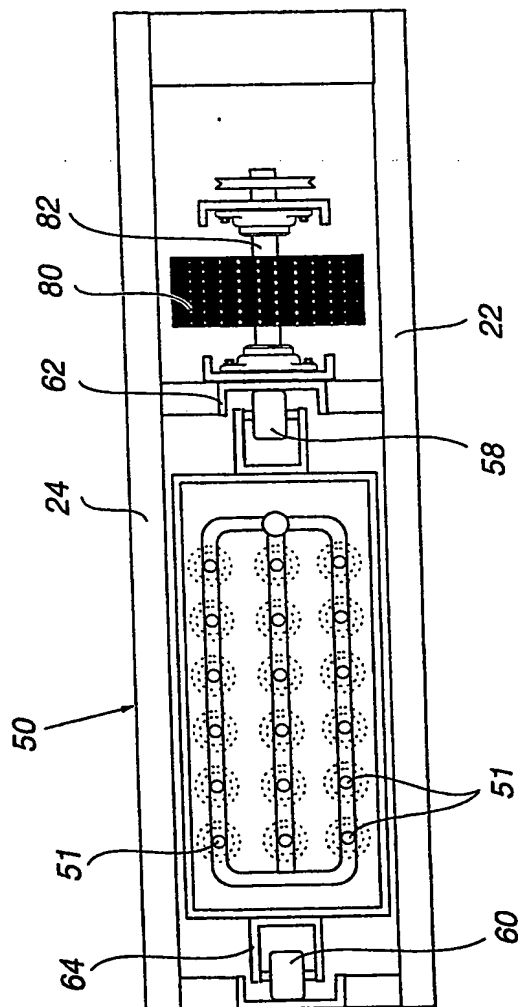


FIG. 3